

P013 AtPRD1: a new protein involved in meiotic double-strand break formation in *Arabidopsis*

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The *Saccharomyces cerevisiae* Spo11 protein catalyses DNA double-strand breaks (DSBs) that initiate meiotic recombination, and at least nine other proteins are required for recombination initiation in this organism. In *Arabidopsis thaliana*, it has been suggested that AtSPO11-1 is required for double-strand break formation whereas putative homologues of Spo11 partners identified in the plant genome are not involved in this step: AtSKI8 doesn't show meiotic specificity, AtMRE11 and AtRAD50 are involved in DSBs repair but not in DSBs formation. These results suggest that if the DSBs formation mechanism is conserved in plants, the control of meiotic recombination initiation differs between unicellular and plants. We have isolated from a T-DNA insertion library a new mutant *Atprd1*. This mutant shows reduced fertility, which is associated with meiotic abnormalities. The *Atspo11-1*-like phenotype of *Atprd1* and the study of meiotic recombination makers as DMC1 suggest that AtPRD1 is involved in early recombination mechanism. Furthermore, epistatic relationship between *Atprd1* and DSB repair mutants suggest that AtPRD1 is absolutely required for meiotic DSBs formation and could be a partner of AtSPO11-1.